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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,157	12/19/2000	Naoko Iwami	16869C-016600US	9696

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EXAMINER

ZHONG, CHAD

ART UNIT	PAPER NUMBER
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2154

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/742,157

Applicant(s)

IWAMI ET AL.

Examiner

Chad Zhong

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-21 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-12, 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Eshel et al. (hereinafter Eshel), US 5,940,840.

4. As per claim 1, Eshel teaches a computer system comprising:

a computational resource (Col. 7, lines 10-15);

a storage system (Fig 5A, 5B); and

a communication link connecting said computational resource and said storage system; wherein said computational resource establishes communications with said storage system using said communication link (Col. 6, lines 1-10); and

wherein said storage system allocates resources to said computational resource based upon a data rate capability of said storage resources (Col. 1, lines 14-16; Col. 8, lines 60-67) and a data rate capability of said communication link (Col. 6, lines 1-17).

5. As per claim 2, Eshel teaches the system of claim 1, wherein said computational resource is a host system (Col. 7, lines 10-15).

6. As per claim 3, Eshel teaches the system of claim 1, wherein said computational resource is a second storage system (Col. 7, lines 3-8).

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7. As per claim 4, Eshel teaches the system of claim 1, wherein said storage system allocates storage resources to said computational resource based upon a data rate capability of said storage resources and a data rate capability of said communication link (Col. 6, lines 1-5, lines 6-10).

8. As per claim 5, Eshel teaches the system of claim 4, wherein said communication link provides a guaranteed quality of service (QoS) communication (Col. 6, line 1).

9. As per claim 6, Eshel teaches the system of claim 5, wherein said guaranteed quality of service (QoS) communication comprises a guaranteed data rate (Col. 6, lines 1-4); and wherein said storage system allocates storage resources (Col. 6, lines 6-17) based upon said guaranteed data rate.

10. As per claim 7, Eshel teaches the system of claim 6, wherein said guaranteed quality of service (QoS) communication comprises a guaranteed bandwidth (Col. 6, lines 1-4); and wherein said storage system allocates storage resources (Col. 6, lines 4-17) based upon said guaranteed bandwidth.

11. As per claim 8, Eshel teaches the system of claim 1, wherein said storage system allocates data path resources (Col. 6, lines 22-24) to said computational resource based upon a data rate capability of said storage resources and a data rate capability of said communication link (Col. 6, lines 1-5, lines 6-10).

12. As per claim 9, Eshel teaches the system of claim 8, wherein said communication link provides a guaranteed quality of service (QoS) communication (Col. 6, line 1).

13. As per claim 10, Eshel teaches the system of claim 9, wherein said guaranteed quality of service (QoS) communication comprises a guaranteed data rate (Col. 6, lines 1-4); and wherein said storage system allocates data path resources (Col. 6, lines 22-24) based upon said guaranteed data rate.

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14. As per claim 11, Eshel teaches the system of claim 10, wherein said guaranteed quality of service (QoS) communication comprises a guaranteed bandwidth (Col. 6, lines 1-4); and wherein said storage system allocates data path resources (Col. 6, lines 22-24) based upon said guaranteed bandwidth.

15. As per claim 12, Eshel teaches an apparatus comprising:

a processor (Col. 7, lines 10-15);

a storage (Fig 5A, 5B); and

a network connection, operable to connect said apparatus at a guaranteed quality of service (QoS) (Col. 6, lines 1-4); and

wherein said processor establishes a data path between said storage and said network connection (Col. 6, lines 1-10); said data path being assigned a sufficient data speed to accommodate said guaranteed quality of service (Col. 6, lines 22-24).

16. As per claim 17, Eshel teaches a method for allocating; resources in a storage system, said storage system comprising a storage and a network connection, said method comprising:

establishing a data path between said storage and said network connection; said data path being assigned a sufficient data speed based upon a data capacity of said storage and a data rate capability of said network connection (Col. 6, lines 1-4, lines 6-17, lines 22-24); and

allocating said storage based upon a data capacity of said storage (Col. 6, lines 6-17) and a data rate capability of said network connection (Col. 6, lines 1-4).

17. As per claim 18, Eshel teaches the method of claim 17, wherein said network connection provides a guaranteed quality of service (QoS) communication, wherein establishing said data path comprises assigning a data path having a sufficient data speed to accommodate said guaranteed quality of service (Col. 6, lines 1-4, lines 22-27).

18. As per claim 19, Eshel teaches the method of claim 17, wherein said network connection provides a guaranteed quality of service (QoS) communication (Col. 6, lines 1-4), wherein allocating storage comprises allocating storage having a sufficient data capacity to accommodate said guaranteed data rate (Col. 6, lines 6-15, lines 22-24).

19. As per claim 20, Eshel teaches the method of claim 17, wherein said establishing a data path comprises:

searching for unallocated data communications resources to accommodate a data capacity of said storage (Col. 7, lines 37-45).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eshel et al. (hereinafter Eshel) in view of 'Official Notice'.

22. As per claims 13-16, Eshel does not teach the network connection comprises of ATM, ISDN, DSL and RSVP respectively. However 'Official Notice' it taken by the Examiner that these communications protocols are notoriously well known for guarantee of QoS in a computer communications network. Hence, it would have been obvious to have used any of the above mentioned communication protocol for the current invention, because doing so would be less burdening for the individual units, through QoS enabled protocol for providing the QoS requirement, the storage

system would thereby accommodate to that requirement accordingly.

23. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eshel et al. (hereinafter Eshel) in view of Wakamiya et al. (hereinafter Wakamiya), US 5,682,477.

24. As per claim 21, Eshel does not teach the method of claim 17, wherein said allocating storage comprises:

searching for unallocated storage having a sufficient data capacity to match a data rate capability of said network connection.

25. Wakamiya teaches the method of claim 17, wherein said allocating storage comprises:

searching for unallocated storage having a sufficient data capacity to match a data rate capability of said network connection (Col. 1, lines 57-67; Col. 3, lines 21-30).

26. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Eshel and Wakamiya because they both dealing with magnetic disk management and resource organization. Furthermore, the teaching of Wakamiya to allow searching for unallocated storage having a sufficient data capacity to match a data rate capability of said network connection would improve the capability for Eshel's system by utilizing unallocated spaces in a more efficient manner.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents and publications are cited to further show the state of the art with respect to "guaranteed Data Access Speed for a Storage System".

- i. JP 09-93304 Kitai et al.

- ii. US 6324165 Fan et al.
- iii. US 6651072 Carino, Jr. et al.
- iv. US 6085223 Carino Jr. et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Zhong whose telephone number is (703) 305-0718. The examiner can normally be reached on M-F 7am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on 703-305-8498. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

CZ
March 4, 2004



JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
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